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GB 2043737A

GB 1046632

GB 487358

GB 483868

DE 2908749A

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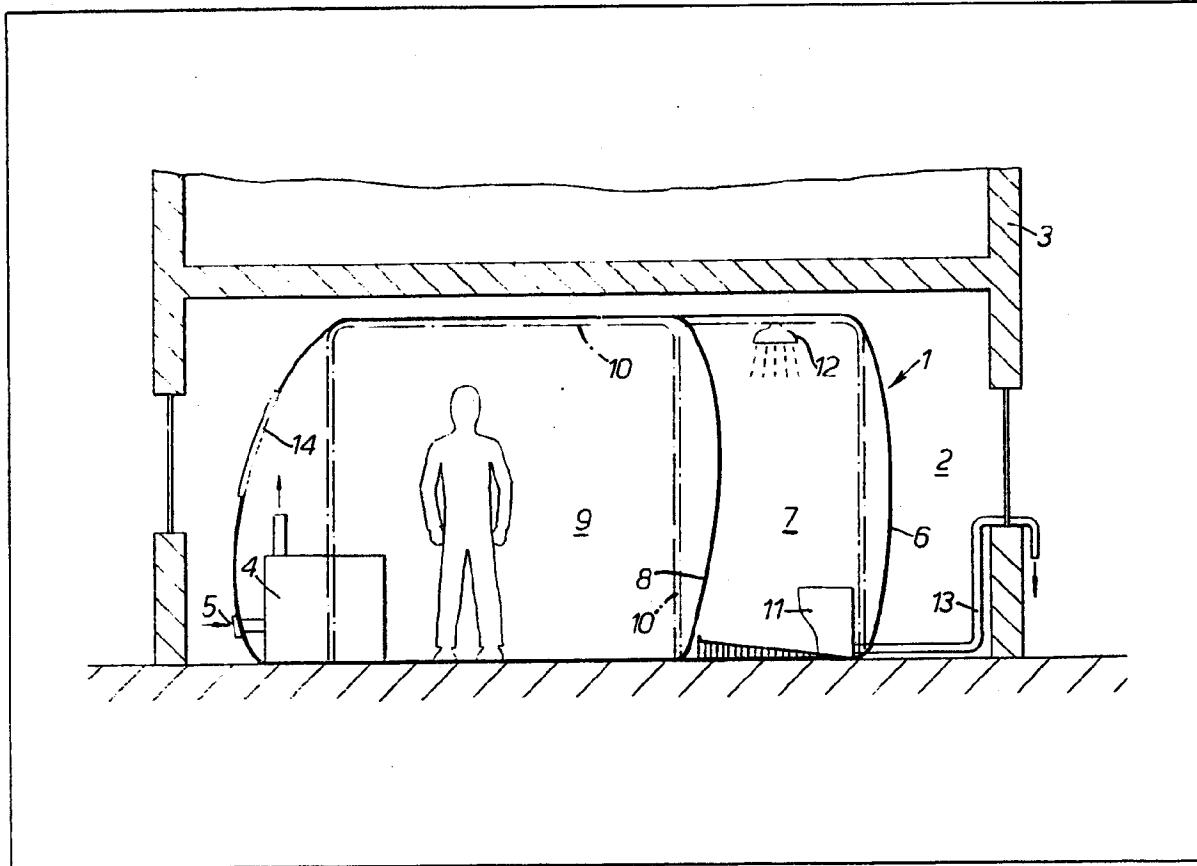
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(54) Shelter to provide protection from nuclear fallout and/or war gas

(57) A shelter to provide protection from nuclear fall-out and/or war gas has a flexible, inflatable envelope (1) containing its own life support system and being able to be stored in a collapsed condition until

required. A sealable access (6) is provided and an over-pressure within the envelope can be maintained by means of a hand-operated air compressor (4) which draws in external air through an air inlet (5) and through a dust and war gas filter. The shelter can be divided into two chambers (7, 9) of which one can form an air-lock chamber between the access opening and the other chamber. Sanitary and decontamination equipment (11, 12) can be provided in the air-lock chamber.

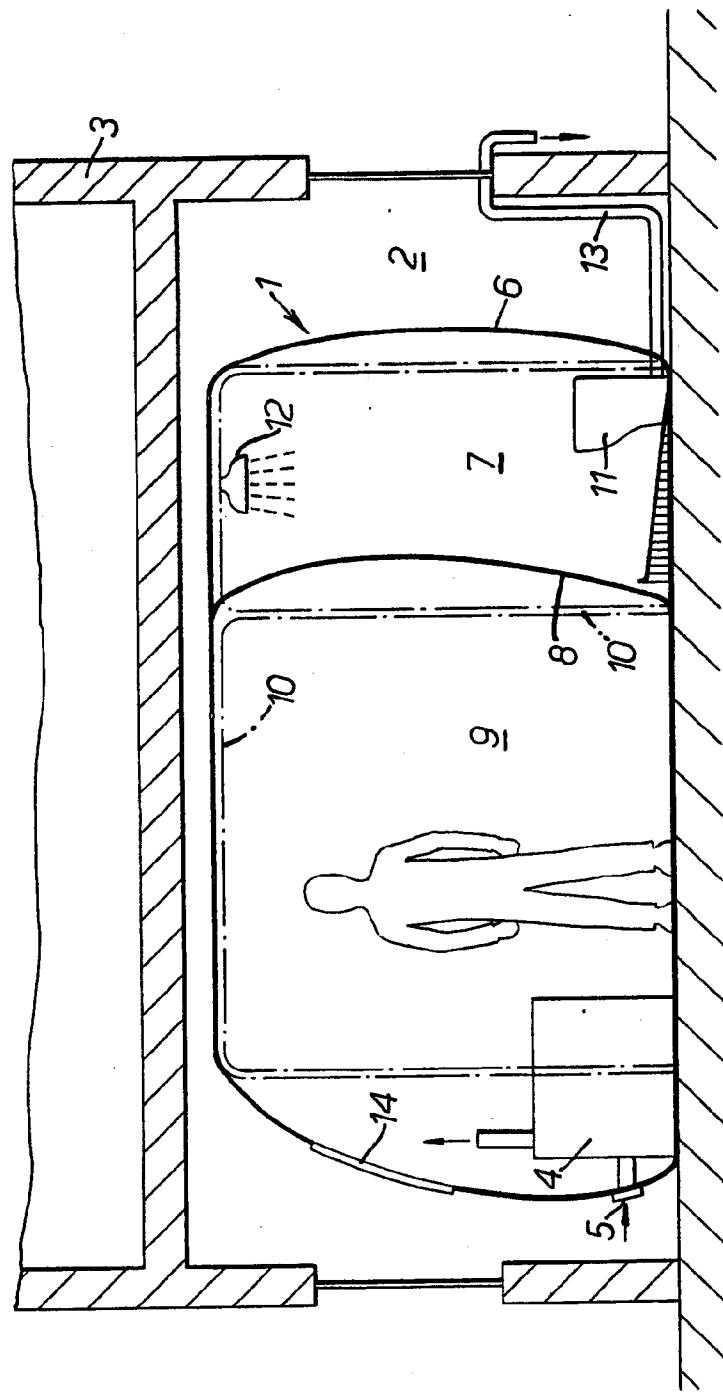


The drawing originally filed was informal and the print here reproduced is taken from a later filed formal copy.

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SPECIFICATION

Shelter to provide protection from nuclear fallout and/or war gas

5 In the event of a nuclear attack, there is a zone within which total destruction of buildings takes place and where the chances of human survival are small. However, in areas 10 further from the point of explosion of the nuclear device, houses may be damaged but not demolished. Within this area it is possible for people to survive the initial blast of the 15 explosion and, provided that they are protected from the effects of air-borne contamination for a period of several weeks, the chances of total survival are good. Many shelters, together with accessories such as filters, pumps, air-locks and effluent handling equipment 20 are available, but most are based upon complete structural enclosures of concrete, steel, etc. These shelters are necessarily expensive and often use space which cannot otherwise be usefully employed.

25 According to the present invention, there is provided a shelter to provide protection from nuclear fallout and/or war gas, the shelter comprising a flexible, inflatable envelope containing its own life support system and being 30 able to be stored in a collapsed condition until required, a sealable access being provided to the inside of the envelope.

35 For a better understanding of the invention and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawing, in which the single Figure diagrammatically shows a cross-section through a shelter according to the invention in its inflated state 40 and ready for use inside a building.

Referring to the drawing, the shelter comprises a flexible, inflatable envelope 1 which contains its own life support system.

45 In the particular form of shelter shown, it is inflated in a room 2 of a domestic house 3. Air pressure within the envelope is maintained at a positive increment over external air pressure and this can be achieved by a hand-operated air compressor 4 drawing external 50 air through an air inlet 5 and through a dust and war gas filter associated with the compressor.

55 A sealed access opening 6 is provided at one end of the envelope, this access opening being arranged to have a controlled air leak facility to allow for air flow through the envelope. The access opening 6 opens into an air lock chamber 7 within the envelope, there 60 being an inner wall 8 forming the inside wall of the air lock chamber 7 and providing a sealed access to a living chamber 9 which forms the main chamber of the shelter. As with the access opening 6, the sealed access in the wall 8 is provided with a controlled air 65 leak facility so that air flow is from the air

inlet 5, through the main chamber 9, through the air lock chamber 7 and out of the air leak facility associated with the access opening 6.

A collapsible lightweight frame 10 can be 70 provided to give support to the envelope when inflated. Alternatively, it is possible for the envelope itself to have its own pneumatic supporting tubes incorporated therein. The supporting frame 10 is really only required to 75 assist in erection of the shelter and a further possibility could be that the envelope is erected by suspending from hooks embedded in the ceiling of the room instead of or as well as providing a frame or supporting tubes.

80 As well as providing access to the chamber 9, the air lock chamber 7 can be used for the siting of sanitary equipment 11 and decontamination equipment 12. A means 13 would then be provided for discharging effluent.

85 A translucent panel 14 can be provided in one or more walls of the shelter.

It will be appreciated that the present shelter may be stored in a collapsed or folded condition, perhaps within a special case, until 90 required and may then be transported to the selected room and inflated within it. Accordingly, a compact and comparatively inexpensive enclosure, incorporating the necessary equipment is provided, which may be quickly 95 erected within a suitable room of a house, for example, in order to convert this to a sealed shelter to provide protection from nuclear fallout and/or war gas.

The shelter may be made in modular form 100 so that the chamber 7 can be removed by self-closing sliding clasp fasteners and additional sections can be added at will.

CLAIMS

- 105 1. A shelter to provide protection from nuclear fallout and/or war gas, the shelter comprising a flexible, inflatable envelope containing its own life support system and being able to be stored in a collapsed condition until 110 required, a sealable access being provided to the inside of the envelope.
2. A shelter as claimed in claim 1 and comprising means to maintain air pressure within the envelope, in use of the shelter, at a positive increment over external air pressure.
3. A shelter as claimed in claim 2, wherein said means comprises an air compressor within the envelope, an air inlet through which external air can be drawn and 120 a dust and war gas filter to treat the air.
4. A shelter as claimed in any one of the preceding claims, wherein said envelope is provided with a controlled air leak facility to allow air to escape from within the shelter.
- 125 5. A shelter as claimed in any one of the preceding claims, wherein said envelope is divided by an internal wall into two chambers of which one forms an air lock chamber provided between said sealable access and the 130 other chamber, said internal wall having its

own sealed access to said other chamber.

6. A shelter as claimed in claim 5,
wherein said one chamber is provided with
sanitary equipment.

5 7. A shelter as claimed in claim 5 or 6,
wherein said one chamber is provided with
decontamination equipment.

8. A shelter as claimed in claim 6 or 7,
wherein means is provided for discharging
10 effluent.

9. A shelter as claimed in any one of the
preceding claims, wherein a collapsible li-
ghtweight frame is provided to give support to
the envelope during inflation.

15 10. A shelter as claimed in any one of
claims 1 to 8, wherein said envelope is pro-
vided with pneumatic supporting tubes incor-
porated therein.

11. A shelter as claimed in any one of the
20 preceding claims, wherein said envelope has
means to enable it to be suspended from a
ceiling of a room.

12. A shelter as claimed in any one of the
preceding claims and being made in modular
25 form to provide a plurality of chambers which
can be removed from one another and added
at will.

13. A shelter to provide protection from
nuclear fallout and/or war gas, substantially
30 as hereinbefore described with reference to
the accompanying drawing.

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